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AN OPERATION FOR THE REMOVAL OF THE EYE-BALL, TOGETHER WITH THE ENTIRE CONJUNCTIVAL SAC AND LID MARGINS.

BY DR. JOHN GREEN, OF ST. LOUIS.

Three of the cases now reported were mentioned in a verbal communication made to the American Ophthalmological Society at the meeting of 1882. With the exception of a short abstract which appeared in the following number of Knapp's Archives, no report of them has been published.

In several cases of granulation of the eye-ball, and of partial or total evisceration of the orbit, involving extensive loss of conjunctiva, it has appeared to me judicious to excise the whole conjunctiva, together with the tarsal tissue and the cilia-bearing lid margins, thus preserving large flaps from the very extensible skin and muscle layers of the lids to cover in the cavity, left by the operation and avoiding the subsequent annoyance resulting from the preservation of a useless amount of the conjunctival sac.

The first of these cases was that of a young farmer who had suffered for several years from a malignant ulcer of the inner canthus, which had largely destroyed the conjunctiva on the nasal side of the cornea, together with nearly one-third of the tarsal tissue of both lids. The function of the internal rectus muscle was abolished, and there was a deep cavity extending backwark nearly to the equator of the still intact eyeball.

Judging that it was impracticable to save the eye-ball, or a sufficient amount of lid tissue and conjunctiva to admit of the wearing of an artificial eye, I decided to perform enucleation and to combine with it the removal of the lid-margins, the tarsal tissue and the entire conjunctival sac. I was assisted in the operation by Dr. H. H. Mudd.

The diseased tissue at the inner canthus was cut freely away within a curved incision carried down to the bone, and the two ends of this incision were extended through the skin and muscle layers of the upper and lower lid along the ciliary margin. The skin and muscle were then dissected from the tarsal tissue as far as the upper and lower borders of the orbit, and the tendon of the levator palpebrae superioris was lifted on a strabismus hook and divided. The tarsal tissue was then seized with hooked forceps and drawn forwards, and the whole conjunctival sac was dissected out with scissors so as to expose the tendons of the superior, external and inferior rectus muscles. These were successively taken up on a strabismus hook and divided, the optic nerve was cut through from the temporal side, and the tissues at the nasal side of the orbit were carefully cleaned from the bone from behind forwards. The tumor was thus thoroughly dissected out, leaving the wall of the orbit denuded at the inner side to the extent of perhaps two centimeters in diameter. The flaps formed by the lid integument and orbicularis muscle were easily brought together by means of three or four sutures, so as to cover in the temporal half of the wound, leaving a pretty large opening at the nasal end to heal by granulation. Union along the line of suture occurred without suppuration; the remaining opening, healed rapidly by granulation, and covered itself by drawing in the loose integument of the lids, so that at the end of a month a horizontal linear cicatrix alone remained to mark the site of the incisions. The skin was drawn smoothly over the concave surface of a shallow depression not deeper than that presented, after an enucleation by the sunken eye-lids when unsupported by an artificial eye.

In this case the lachrymal gland was left in situ; no inconvenience resulted from its non-removal. The second case was that of Mrs. J. S., 50 years of age, whom I first saw Oct. 4,

1880. She had lost the left eye twelve years before, from an inflammatory attack accompanied by perforating ulcer of the cornea. The globe was shrunken to about three-fourths of its normal diameter. There was considerable destruction of tissue at the inner canthus resulting from the free use of caustics four months before for the purpose of destroying what had been considered a malignant growth. The lachrymal sac lay widely open and was discharging freely; the adjacent tissues of the lid were sligtly ulcerated, but without induration.

The obstructed nasal duct was dilated by repeated probing, canthotomy, with free division of the external tendon of the orbicularis, was performed for the purpose of relaxing the tissue near the inner canthus, and a group of inverted cilia near the nasal end of the upper lid was excised. The patient went home Nov. 22, with seemingly perfect cicatrization of the ulcerated tissues at the inner canthus, with the lids well relaxed, and relieved from the irritation which had been caused by the inverted eye-lashes. In view of the uncertainty regarding the nature of the original affections for which the cauterization had been practised she was cautioned to return promptly in case of any reappearance of trouble. She returned March 27, 1882, with an epithelioma which extended upon the side of the nose to within five millimeters of the median line and involved about one-third of the tarsal tissue of both lids.

Excision of the diseased tissues with enucleation of the globe was performed exactly as in the former case but with the result of leaving a larger gap at the side of the nose to heal by granulation. The inner wall of the orbit in the region of the lachrymal bone was thoroughly scraped and several small portions of the bone were cut away. The wound healed within six weeks, in part by the union of the flaps preserved from the lid integument and orbicularis muscle, and in part by granulation growth from the edges of the surrounding skin. The remnant of the open lachrymal sac filled with granulations and healed smoothly over with the rest of the granulating wound. Two weeks later the patient was discharged with a smooth, firm cicatrix at the side of the nose, and a linear scar extending from it to the external canthus. In this case also the lachrymal gland was left in situ without resulting inconvenience.

A third operation of the same character was performed about two years ago by Dr. A. Alt at the St. Louis City Hospital, upon a patient whom we saw together in consultation. In this case the whole margin of the lower lid together with the lower half of the conjunctival sack had been destroyed by an epithelioma. The skin and muscle of the upper lid gave a flap of sufficient size easily to come into the cavity left by the enucleation and the excision of the remnants of the lower lid.

The fourth and last case is that of H. D., a farmer 55 years of age, who fifteen years ago was struck by a stick of wood upon the right eye. Two months later the eye "ran out." During the past year the orbit began to fill up, and for two months before he consulted me the new growth had increased rapidly until it had considerably distended the eyelids and had become pretty firmly impacted, although still slightly movable by the recti muscles. The tumor was covered in front by the swollen conjunctiva bulbi, in which a small depression seemed to mark the former position of the cornea.

The operation, which was performed May 1, 1884, consisted in the clearing out of the entire contents of the orbit, through the palpebral opening enlarged at the temporal side by scissors. The lid margins were then clipped away, and the tarsal tissue of the upper and lower lids grasped by toothed forceps and dissected out. The thickened bulbar conjunctiva was removed with the tumor. The wound was left without sutures. May 18. —The patient went home. The orbital cavity was already much reduced in size and presented a uniformly granulating surface. The palpebral opening was rapidly closing at both ends, but more at the temperal end, and was about three-quarters of an inch long. There was every prospect of the speedy covering in of the whole granulating surfaces by the integument of the lids leaving a linear scar crossing a rather deep depression.

The advantage which may fairly be claimed for this operation is, that it permits the free excision of very extensively diseased tissues and leaves a firm, smooth, and nearly linear cicatrix, with a minimum quantity of scar tissue.

A CASE OF SYMPATHETIC NEURO-RETINITIS.

BY THOS. R. POOLEY, M. D., OF NEW YORK.

Without desiring to engage in the discussion which is just now exciting a good deal of interest, as shown by a recent article in the Archives of Ophthalmology, by Dr. Theobald, of Baltimore,* and the comments on the same by the editor of this journal in the last number, I simply desire to report a case which bears on this question, that recently came under my notice. January 24th. 1884 I was consulted by a man 30 years of age, who had lost his left eye by an injury many years before. Aside from this fact, he suffered but the inconvenience consequent upon the loss of so important an organ until a few months before he consulted me, when the lost eye began to be, at times, red and painful, and soon he found, too, that the sight of the other was becoming impaired. His left eye showed the usual signs of irido-cyclitis. It was somewhat phthisical, there was moderate circum-corneal injection, a shallow anterior chamber, discolored iris, with complete circular synechia and cataract.—T and pain on pressure. There was a small scar on the sclero corneal margin, which marked the site, where the foreign body was still in the eye. There was no perception of light. The outward appearances of the right eye were quite normal, but vision was only $\frac{20}{LXX}$. Ophthalmoscopic examination, showed a delicate infiltration of the optic disc and adjacent retina, which was sufficient to obscure the vessels and the margin of the nerve, and produce cloudiness of the retina. There was also very marked venous hyperæmia which extended to the peripheral portion of the vessels. The iris and uveal tract were entirely free from any evidences of inflammation, and the vitreous was perfectly clear.

I advised enucleation of the injured eye, which was readily consented to by the patient, and performed the same day.

The eye-ball was opened immediately after its removal by a

*Some recent theories regarding the pathogeny of sympathetic ophthalmia viewed from a macroscopic standpoint.

meridional section. It showed the usual plate of bone in the anterior portion of the choroid, which has been described by Knapp and others, as well as calcareous degeneration of the shrunken lens. The retina was detached. But the most remarkable feature was the condition of the optic disc and the surrounding retina, which showed an *intense neuro—retinitis.* The nerve was very much swollen, protruding into the vitreous chamber, and both it and the retina surrounding the margin covered by a thick exudation hiding the vessels. The extra-ocular extremity of the nerve, too, was much swollen, its sheaths separated, and the intra-vaginal space filled with fluid. Only a cursory examination was made, and the globe reserved for a further examination, which has not yet been made. No foreign body was found in the eye. After the operation the patient was kept in bed for one week, with a bandage over both eyes, no other treatment being employed. At the end of this time, when discharged from the hospital his V had increased to $\frac{20}{L}$ and the ophthalmoscope showed that the exudation had nearly disappeared, although there was still some fullness of the veins. One week later the fundus looked fairly normal, his V was $\frac{20}{XXX}$ and with a +30 glass he read the finest type.

So far as one case goes to prove anything, it seems to me, we may assume this to be a case of sympathetic neuro-retinitis which had extended from the injured eye to the other along the optic nerve and its sheath by way of the chiasma, which was shown by the condition of both the intra and extra-ocular ends of the enucleated eye, and by the expression in the other, of a pure neuro-retinitis, without the slightest involvment of the anterior portion of the uveal tract. Whether, or not, the transmission of the inflammation by the ciliary nerves in the ordinary forms of sympathetic inflammation be the correct theory, we must still admit that in such cases as the above, and other similar ones the transmission of the sympathetic inflammation is almost certainly by this route. It would be a work of supererrogation to say more in support of such a view in this place, as Dr. Alt has entered quite fully into the subject, and promises to continue his communication.

SOME INSTRUCTIVE CASES OF AMETROPIA.

BY SAMUEL THEOBALD, M. D.

Professor of Diseases of the Eye and Ear in the Baltimore Polyclinic and Post-Graduate Medical School; Surgeon to the Baltimore Eye, Ear and Throat Charity Hospital.

It is well known that in ametropic persons there exists no constant relationship between the amount of the optical defect and the degree of the asthenopia which it induces, that in some individuals a trifling amount of hypermetropia or astigmatism will cause decided asthenopic symptoms, while in others a very much greater amount will give rise to no appreciable discomfort. The following case, however, furnishes so striking an example of a high degree of ametropia being borne for years without causing any annoyance, as to make it deserving of mention:

Mrs. B., 36 years of age, the widow of a physician, had always considered herself "near-sighted," because she did not see distant objects as distinctly as other people; but, with this exception, she had prided herself upon the strength of her eyes, and had read and sewed day and night for years without the slightest discomfort. She would not have thought it necessary to have her eyes examined at all, but that she had recently been suffering from obstinate frontal headaches, and her physician, knowing that her sister had required astigmatic correction, suspected that she, too, might be in need of glasses, and suggested that she should consult me.

Upon examination it was found that with each eye she could see only $\frac{20}{cc}$, and that this marked impairment of vision was due to a very high degree of mixed astigmatism. A careful test of the refraction was made, both with and without paralysis of accommodation, and the following glasses, which gave for the left eye V = $\frac{20}{xx}$ (?) and for the right eye V = $\frac{20}{xxx}$ (nearly), were prescribed:

L. Eye = $\frac{1}{18}$c axis 170°⌒ — $\frac{1}{13}$c axis 80°.

R. Eye = $\frac{1}{20}$c axis 100°⌒ = $\frac{1}{11}$c axis 90°.

From this it will be seen that there was a total astigmatism in the left eye of, $\frac{1}{7.54}$ and in the right eye of $\frac{1}{7.09}$, the myopic element

predominating in each. The glasses proved very satisfactory, and the frontal headaches, as was expected, disappeared.

I have the notes also of the case of a gentleman about 38 years of age, of literary tastes, who had never suffered from asthenopia. though he had, uncorrected, a myopic astigmatism of one $\frac{1}{14}$ in one eye, and a mixed astigmatism of more than $\frac{1}{12}$ (H. $\frac{1}{12}$, M. $\frac{1}{14}$) in the other; but who was greatly pleased to receive correcting glasses, as they improved his vision from $\frac{20}{LXX}$ to $\frac{20}{XXX}$.

In contrast with these striking examples of tolerance of astigmatism, I might cite many cases in which marked asthenopic symptoms have been produced by an astigmatism of only $\frac{1}{12}$ and more than one in which the correction of an astigmatism of $\frac{1}{144}$ has been of undoubted benefit.

In regard to the glasses which should be prescribed when there is *a difference of refraction in the two eyes*, Donders says, when the difference is slight, amounting to not more than $\frac{1}{48}$ or $\frac{1}{36}$, we may give to each eye the lens which is required for accurate correction, but that "the difference in glasses can rarely exceed $\frac{1}{40}$ or $\frac{1}{30}$."[1]

Nettleship says it is seldom possible to make a difference greater than 1.5 D.[2]; while Noyes states that "a difference not more than $\frac{1}{16}$ between the eyes can often be easily tolerated in the correcting glasses."[3]

The following case shows how very far these limits may be exceeded, in exceptional instances.

Mr. H., a college student, about 20 years of age, consulted me in September 1880, on account of asthenopia and defective vision. With the right eye he could see only $\frac{10}{CC}$, but could read Jaeger No. 1; while with the left eye he could see $\frac{20}{LXX}$ (?), but only spell out with difficulty short words of Jaeger No. 3. The right eye was found to be decidedly myopic and slightly astigmatic, $-\frac{1}{14}$s $\bigcirc$ $-\frac{1}{60}$c axis 170° improving V to $\frac{20}{XX}$ (?). The left eye, on the contrary, showed slight manifest hyperme-

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1 Accommodation and Refraction of the Eye, p. 556.

2 Diseases of the Eye, p. 316 (Am. Edition).

3 Diseases of the Eye, p. 76.

tropia and a high degree of hypermetropic astigmatism, and its V was improved to the same point as that of the other by $+\frac{1}{48}$s ⌒ $+\frac{1}{10}$c axis 100°. When binocular vision was attempted through these glasses, there was a momentary doubling or confusion of the retinal images, but as this disappeared in a moment, and vision for both near and distant objects was comfortable and entirely satisfactory to the patient, I determined to prescribe them, advising him to wear them constantly, for near as well as distant vision. The experiment was entirely successful, and satisfactory binocular vision was thereafter enjoyed. The difference between the spherical glasses in this case was a little more than $\frac{1}{11}(\frac{1}{10.8})$, between the cylinders considerably more than $\frac{1}{9}$, and between the most hypermetropic meridian of the left eye and the most myopic meridian of the right there was a difference equal to a lens of less than 5″ focus.

The subsequent history of this case presents another interesting feature. Since by the action of his glasses the left eye was made to take an active part in near vision, which probably it had not done before, it presently began to show a tendency to myopic elongation, as the right eye which he had previously used for near vision had already done; so that sixteen months after the first examination the compound hypermetropic astigmatism of the left eye had given place to a mixed astigmatism, requiring for its correction — $\frac{1}{60}$c axis 15° ⌒ $+\frac{1}{11}$c axis 105°. Fourteen months after this second examination the distant vision of the left eye had again become indistinct, and I found it necessary to change the correction to — $\frac{1}{36}$ c axis 15° ⌒ $+\frac{1}{13}$ c axis 105°, which again brought up the V of this eye to $\frac{20}{XX}$ (?). The refraction of the right eye, meantime, had undergone no change, and its V, with the lens first prescribed, was still $\frac{20}{XX}$ (?). More than a year has elapsed since this last modification of his glasses, but as the eyes have not been examined since, it is not known whether the refraction has undergone any further alteration.

The case of Miss F., about 35 years of age, furnishes another example of glasses markedly different in focus being worn with satisfaction. Her left eye was operated upon successfully some years since for strabismus, and its V is only $\frac{20}{LXX}$. The right eye I performed an iridectomy upon two years ago for an

inflammation of glaucomatous character, but with its considerable amount of (probably traumatic) astigmatism corrected, it has V $=\frac{20}{XX}$ (?). For the past six months this patient has been wearing with satisfaction for distant vision (though she speaks of occasionally seeing objects double) L. Eye $+\frac{1}{8}$ s⌒ $+\frac{1}{30}$ c axis 90° R. Eye $+\frac{1}{18}$c axis 5°. With these she has, as stated, V $=\frac{20}{LXX}$ with the left eye; V $=\frac{20}{XX}$ (?) with the right.

To these two cases which show how great a difference in the strength of the glasses it is sometimes practicable to make, the following case, which illustrates the decided benefit that may result from taking account of even slight degrees of anisometropia, and presenting for each eye the lens which its refraction calls for, may be added:

Mr. C., aged 41, is at the head of a large retail shop, and having charge of the books is constantly engaged in writing. He is prematurely presbyopic, and at the time he sought my advice was wearing for near vision $+\frac{1}{16}$ s glasses. With these he could see small type distinctly, but he complained of persistent asthenopia in near vision, chiefly in the right eye. He was found to have with each eye V $=\frac{20}{XX}$, and in neither was there any astigmatism. Upon carefully testing each eye with glasses, a slight amount of hypermetropia (Hm. $\frac{1}{72}$) was discovered in the right, while there was no Hm. at all in the left. His near vision was then tested, and it was found that with $+\frac{1}{16}$ (the glasses he had been wearing) the left eye could read Jaeger No.1 a good deal closer than the right. With $+\frac{1}{18}$ for the left eye, and $+\frac{1}{18}$ for the right, the near point of the left was still rather closer than that of the right; but when given $+\frac{1}{15}$ the right eye had the advantage, a difference of two numbers between the glasses being more, apparently, than was called for; accordingly, in place of the $+\frac{1}{16}$ glasses which he had been wearing, he was given $+\frac{1}{16}$ s for the right eye, $+\frac{1}{18}$ for the left. This slight change accomplished all that could be desired. The asthenopia disappeared at once, and during the twelve months which have since elapsed, has not returned.

A NOMENCLATURE OF OPHTHALMOLOGY.

BY SWAN M. BURNETT, M. D.

Prof. of Clinical Ophthalmology and Otology in the University of Georgetown; Ophthalmic and Aural Surgeon to the Garfield Memorial Hospital and to the Central Dispensary, Washington, D. C.

The need of a uniform nosology in ophthalmology is so strongly felt that it is not necessary to insist upon its importance.

Modern ophthalmology was so sudden in its rise and so rapid in its progress that even its students have found it difficult to keep pace with the refinements in meaning of those terms that have been necessarily introduced to express our more accurate knowledge, while to the non-specialist they sound almost like an unknown tongue. It would seem to be time therefore to compile a list, as complete as may be possible, of ophthalmic diseases and anamolies for the benefit both of our specialty and the profession at large.

In 1880 the National Board of Health not being able to find any such list applied to me to furnish them with one to be used in the returns of vital statistics. This list was made and published in Supplement number 9 of their Bulletin. It was offered only as suggestions towards that full and complete ophthalmic nosology which was looked forward to in the new Nomenclature of Diseases to be issued by the Royal College of Physicians of London, on which a committee had been at work for a number of years. This committee has made its report to the College and I have, through the courtesy of Dr. J. S. Billings, of the Library of the Surgeon General's Office, had an opportunity of examining it. The incompleteness of the nomenclature of ophthalmology as recommended by this committee has been found upon this examination, to be so great that at the suggestion of the editor of this Journal, I have agreed to the republication, with revision, of my original list.[1]

1. My list contains about one hundred more names than the report of the committee. Among the more important omissions may be mentioned Choroiditis areolaris — C. exudative — C. disseminate.— C. spongy.—

It is a matter deeply to be deplored that so high an authority as the Royal College of Physicians should put forth so imperfect a nosology, and such indifference to the claims of such an important branch of medical science as ophthalmology can, it seems to us, find no excuse. There are several ophthalmologists in England who are capable of giving us, under the seal of the Royal College of Physicians, as complete a nomenclature as is possible under the circumstances, and the pity of it is that another such opportunity is not likely to arise for a number of years.

The following list is offered to the profession, in the absence of anything better, as a basis for and the beginning of what we hope may become in time a complete nosology, useful both to the specialist and the statistician. We do not claim for it perfection or completeness. About many points there may and will be dif-

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Chorio-retinitis. — Detachment of the choroid.—Hyperæmia of the choroid.— Sclerotico — choroiditis.— Croupous conjunctivitis.— Ulcer of the conjunctiva.—Circumcorneal hypertrophy of the conjunctiva—Keratitis-bullosa—K. fascicular.—K. neuroparalytic.— Kerato-iritis.— Leucoma adherens.—Pannus crassus.—P. tenuis.— Resorption ulcer of the cornea.—Sclerosis of the cornea. No mention is made of any forms of glaucoma, but the acute, chronic, hemorrhagic, fulminans and secondary. Essential Phthisis bulbi is not mentioned. Neither is any form of cyclitis, corectopia, exclusion of the pupil, occlusion of the pupil, plastic iritis, purulent iritis, no forms of irido-cyclitis or irido-choroiditis, reversion of the iris, rupture of the iris, rudimentary iris, nor spongy iritis.

Several forms of cataract are omitted; and neither lenticonus nor subluxation of the lens are noted. Under diseases of the lids we fail to find tarsitis, distichiasis, lagophthalmus, nictitation, and several other minor affections. No record is made of blepharospasm, insufficiency of the muscles, and only three kinds of strabismus are mentioned, viz., paralytic, spasmodic and concomitant.

No form of paralysis of the ocular muscles is mentioned. Tenonitis, dislocation of the eye-ball, and fracture of the bones of the orbit are passed over in silence. Under "disorders of vision," we fail to find any allusion whatever to anomalies of the visual field, metamorphopsia, or nervous asthenopia, and many of the various forms of amaurosis and amblyopia are not set down. Regular astigmatism is divided into myopic and hypermetropic, the compound forms not being mentioned.

Many affections of the retina are omitted, among them embolism of the central artery of the retina, perivasculitis, thrombosis; and neuro-retinitis descending and ascending, retro-bulbar neuritis and dropsy of the nerve sheath are not to be found.

ferences of opinions, but a perfectly satisfactory nosology is a dream to be realized only by the ophthalmologist of the very distant future.

In making a nomenclature to be used by English-speaking people it is often a matter of difficulty to select the proper term for certain affections. We have in the following list employed, wherever practicable, English words, taking the Latin and Greek terms only in those instances, where long usage has rendered them a part of our medical vernacular, or where they offered the advantage of decided brevity and compactness. So far as it has been possible, we have tried to make the specific name of a disease correspond to the known or supposed pathology of the affection, though in deference to past usages we have often at the same time given the name furnished by other characteristics, thus: We have given, in addition to *conjunctivitis purulent*, *C. gonorrhœal*, to indicate one especial cause, and *C. of the new-born*, because this has been for years regarded as a special form of purulent conjunctivitis. It has not been possible, of course, to give every name a disease has been, or is even now known by, but we think it is possible to classify any affection of the eye under some name to be found in the following list:

AFFECTIONS OF THE CHOROID AND VITREOUS HUMOR.

Atrophy of the choroid.
Choroiditis, areolar.
Choroiditis, exudative.
Choroiditis, disseminate.
Choroiditis, metastatic.
Choroiditis, plastic.
Choroiditis, purulent.
Choroiditis, serous.
Choroiditis, spongy (gelatinous).
Choroiditis, syphilitic.
Chorio-retinitis.
Coloboma of the choroid.
Detachment of the choroid.
Formation of bone in the choroid.

Foreign body in the vitreous humor.
Hemorrhage into the choroid.
Hernia of the choroid.
Hemorrhage into the vitreous humor.
Hyperæmia of the choroid.
Inflammation of the vitreous humor (hyalitis).
Opacities of the vitreous humor.
Persistent hyaloid artery.
Rupture of the choroid.
Tubercles in the choroid.
Tumors of the choroid.
New blood vessels in the vitreous humor.
Parasites in the vitreous humor.
Sclerotico-choroiditis.
Sparkling synchisis of the vitreous humor.
Synchisis of the vitreous humor.

AFFECTIONS OF THE CONJUNCTIVA.

Amyloid degeneration of the conjunctiva.
Apoplexy of the conjunctiva (ecchymosis).
Atropine conjunctivitis.
Burns of the conjunctiva.
Caruncle, inflammation of.
Chemosis, inflammatory.
Chemosis, passive.
Circumcorneal hypertrophy of the conjunctiva.
Conjunctivitis, catarrhal.
Conjunctivitis, croupous.
Conjunctivitis, diphtheritic.
Conjunctivitis, follicular (papillary).
Conjunctivitis, gonorrhœal.
Conjunctivitis of the globe.
Conjunctivitis of the lids.
Conjunctivitis of the new-born.
Conjunctivitis, phlyctenular (scrofulous).
Conjunctivitis, purulent.
Conjunctivitis, pustular.
Conjunctivitis, trachomatous.

Emphysema of the conjunctiva.
Encanthus.
Foreign bodies in the conjunctiva.
Hyperæmia of the conjunctiva.
Lithiasis of the conjunctiva.
Lymphangiectasia of the conjunctiva.
Malformation of the conjunctiva.
Metallic stains.
Parasites in the conjunctiva.
Pinguecula.
Pterygium.
Tumors of the conjunctiva.
Ulcer of the conjunctiva.
Wounds of the conjunctiva.
Xerosis of the conjunctiva.

AFFECTIONS OF THE CORNEA.

Abscess of the cornea.
Abrasion of the cornea.
Arcus senilis.
Cystoid scar.
Deposit of lead in the cornea.
Deposit of lime in the cornea.
Fistula of the cornea.
Foreign body in the cornea.
Hernia of the cornea.
Hydrophthalmus.
Hypopyon.
Keratitis, diffuse.
Keratitis, bullosa.
Keratitis, fascicular.
Keratitis, neuro-paralytic.
Keratitis, pannous.
Keratitis, parenchymatous (interstitial).
Keratitis, phlyctenular (scrofulous).
Keratitis, punctate.
Keratitis, purulent.
Keratitis, superficial.

Keratitis, syphilitic.
Keratitis, traumatic.
Kerato-conus.
Kerato-globus.
Kerato-iritis.
Kerato-malacia.
Leucoma-adherens.
Leucoma of the cornea.
Macula of the cornea.
Onyx.
Pannus, crassus.
Pannus, tenuis.
Resorption ulcer of the cornea.
Serpent ulcer of the cornea.
Sloughing of the cornea.
Staphyloma of the cornea.
Tumor of the cornea.
Ulcer of the cornea, acute.
Ulcer of the cornea, chronic.
Ulcer of the cornea, marginal.
Wounds of the cornea.
Xerosis of the cornea.

GLAUCOMA.

Glaucoma, absolute.
Glaucoma, acute.
Glaucoma, chronic,
Glaucoma, fulminans.
Glaucoma, hemorrhagic.
Glaucoma, imminent.
Glaucoma, inflammatory.
Glaucoma, secondary.
Glaucoma, simple.
Glaucoma, sympathetic.
Glaucomatous degeneration.

Essential phthisis bulbi.

AFFECTIONS OF THE IRIS AND CILIARY BODY.

Atrophy of the iris.

Coloboma of the iris.
Corectopia.
Cyclitis, plastic.
Cyclitis, purulent.
Cyclitis, serous.
Cyclitis, sympathetic.
Cyst of the iris.
Decoloration of the iris.
Exclusion of the pupil.
Foreign body in the iris.
Gumma of the iris.
Hernia of the iris.
Hemorrhage in the iris.
Hyphæma.
Irido-choroiditis, plastic.
Irido-choroiditis, purulent.
Irido-choroiditis, spongy (gelatinous).
Irido-choroiditis, serous.
Irido-cyclitis, plastic.
Irido-cyclitis, purulent.
Irido-cyclitis, serous.
Irido-cyclitis, sympathetic.
Irido-dialysis.
Irido-plegia.
Iritis, arthritic.
Iritis, gonorrhœal.
Iritis, plastic.
Iritis, purulent.
Iritis, rheumatic.
Iritis, serous.
Iritis, spongy (gelatinous).
Iritis, sympathetic.
Iritis, syphilitic.
Iritis, traumatic.
Iritis, tuberculous.
Irideremia.
Mydriasis.
Myosis.

Occlusion of the pupil.
Polycoria.
Persistent pupillary membrane.
Reversion of the iris.
Rudimentary iris.
Rupture of the iris.
Synechia anterior.
Synechia posterior.
Tremulous iris.
Tumor of the iris.
Wounds of the iris.

AFFECTIONS OF THE LACHRYMAL APPARATUS.

Abscess of the lachrymal gland.
Atresia of the punctum.
Caries of the fossa lacrymalis.
Dacryo-adenitis.
Dacryo-cystitis, catarrhal.
Darcryo-cystitis, purulent.
Double punctum.
Dacryo-lithiasis.
Eversion of the punctum.
Exostosis of the nasal duct.
Fistula of the lachrymal sac.
Foreign body in the punctum.
Fracture of the lachrymal bone.
Fungi in the lachrymal canal.
Inflammation of the lachrymal gland.
Polypus of the lachrymal sac.
Sanguinious lachrymation.
Stillicidium lacrymarum (Epiphora).
Stricture of the nasal duct.
Tumor of the lachrymal gland.

AFFECTIONS OF THE LENS.

Aphakia.
Capsulitis.
Cataract, accreted.

Cataract, anterior polar.
Cataract, axial.
Cataract, black.
Cataract, calcareous.
Cataract, capsular.
Cataract, complete.
Cataract, congenital.
Cataract, cortical.
Cataract, diabetic.
Cataract, fusiform.
Cataract, hard.
Cataract, hypermature.
Cataract, incipient.
Cataract, incomplete.
Cataract, lamellar (zonular).
Cataract, membranous.
Cataract, morgagnian.
Cataract, nuclear.
Cataract, posterior polar.
Cataract, punctate.
Catasact, secondary.
Cataract, senile.
Cataract, soft.
Cataract, spurious.
Cataract, traumatic.
Coloboma lentis.
Dislocation of the lens.
Ossification of the lens.
Parasites in the lens.
Phakitis.
Lenticonus.
Rupture of the lens capsule.
Subluxation of the lens.

AFFECTIONS OF THE LIDS.

Ablepharon.
Abscess of the lids.
Acarus folliculorum.

Ankyloblepharon.
Anthrax of the lids.
Blepharitis marginalis.
Blepharo-adenitis.
Blepharo-phimosis.
Chalazion.
Chromhidrosis (Blepharal melasma).
Coloboma palpebrarum.
Distichiasis.
Ectropion.
Elephantiasis palpebrarum.
Emphysema of the lids.
Entropion, organic.
Entropion, spasmodic.
Epicanthus.
Erythema of the lids.
Hæmophthalmus externus.
Hæmatidrosis.
Hæmatoma (black eye).
Herpes of the lids.
Hidrosis of the lids.
Hordeolum.
Hyperæmia of the lids.
Lagophthalmus.
Madarosis.
Nictitation.
Œdema of the lids.
Paralysis of the orbicularis.
Phthiriasis ciliorum.
Ptosis, atonic.
Ptosis, congenital.
Ptosis, paralytic.
Seborrhœa.
Symblepharon.
Trichiasis.
Tarsitis.
Tumors of the lid.
Verruca of the lids.
Xanthelasma of the lids.

AFFECTIONS OF THE MUSCLES OF THE EYE.

Blepharo-spasm.
Insufficiency of the internal rectus.
Insufficiency of the external rectus.
Laceration of the ocular muscles.
Nystagmus, acquired.
Nystagmus, atonic.
Nystagmus, congenital.
Nystagmus, oscillating.
Nystagmus, rotating.
Nystagmus, tonic.
Ophthalmophegia externa (paralysis of all the external muscles of the eye).
Ophthalmoplegia interna (paralysis of all the internal muscles of the eye).
Paralysis of the ciliary muscles (cycloplegia)
Paralysis of the external rectus muscle.
Papalysis of the internal rectus muscle.
Paralysis of the inferior oblique muscle.
Paralysis of the levator palpebræ superioris muscle.
Paralysis of the motor oculi communis muscle.
Paralysis of the orbicularis muscle.
Paralysis of the superior oblique muscle.
Paralysis of the superior rectus muscle.
Spasm of the ciliary muscle.
Strabismus, bilateral.
Strabismus, concomitant.
Strabismus, convergent.
Strabismus, divergent.
Strabismus, downward.
Strabismus, monolateral.
Strabismus, paralytic.
Strabismus, periodic.
Strabismus, upward.
Tendinitis.

AFFECTIONS OF THE ORBIT AND GLOBE.

Albinism.
Anophthalmus.

Abscess of the orbit.
Bone, formation of, in the eye.
Caries of the orbit.
Cellulitis of the orbit.
Dislocation of the eyeball.
Effusion of blood in the orbit.
Emphysema of the orbit.
Enlargement of the frontal sinus.
Exophthalmus.
Fracture of the orbital bones.
Herpes frontalis.
Inflammation of the frontal sinus.
Microphthalmus.
Necrosis of the orbital bones.
Panophthalmitis.
Periostisis of the orbit.
Phthisis bulbi.
Tenonitis.
Tumor of the orbit.

ANOMALIES OF REFRACTION, ACCOMMODATION AND VISION.

Achromatopsia.
Accommodation, spasm of.
Amaurosis, hysterical.
Amaurosis, partial, transient.
Amaurosis, without ophthalmoscopic signs.
Amblyopia, alcoholic.
Amblyopia, congenital.
Amblyopia, central.
Amblyopia, saturnine.
Amblyopia, tobacco.
Amblyopia, toxic.
Amblyopia, ex anopsia (from non-use).
Amblyopia, hysterical.
Ametropia.
Anisometropia.
Asthenopia, accommodative.
Asthenopia, muscular.

Asthenopia, nervous.
Astigmatism, compound (myopic or hypermetropic).
Astigmatism, irregular.
Astigmatism, mixed.
Astigmatism, regular.
Astigmatism, simple (myopic or hypermetropic).
Blue-yellow blindness (*Hering*).
Chromatopsia.
Color-blindness, acquired.
Color-blindness, congenital.
Concentric contraction of the visual field.
Day-blindness.
Diplopia, homonymous.
Diplopia, crossed.
Diplopia, vertical (up or down).
Dyschromatopsia (feeble color-sense).
Flittering scotoma.
Green blindness.
Hemianopsia, inferior.
Hemianopsia, left.
Hemianopsia, nasal.
Hemianopsia, right.
Hemianopsia, superior.
Hemianopsia, temporal.
Hypermetropia, axial.
Hypermetropia, from deficient curvature of the refracting surfaces.
Hypermetropia, acquired.
Hypermetropia, latent.
Macropsia.
Metamorphopsia.
Micropsia.
Moon-blindness.
Muscae volitantes.
Myopia, axial.
Myopia, acquired.
Myopia, from excessive curvature of the refracting surfaces.
Myopia, false.

Night blindness.
Photopsia.
Presbyopia.
Polyopia, monocular.
Red-blindness.
Red-green blindness (*Hering*).
Ring-scotoma.
Scotoma.
Scotoma, central.
Sector-like defect of the visual field.
Snow-blindness.
Violet-blindness.

AFFECTIONS OF THE RETINA AND OPTIC NERVE.

Amaurotic cat's-eye.
Anesthesia of the retina.
Atrophy of the retina.
Apoplexy of the retina.
Atrophy of the optic nerve.
Atrophy of the optic nerve, progressive.
Chorio-retinitis, diffuse.
Chorio-retinitis, disseminated.
Chorio-retinitis, circumscribed.
Commotio retinæ.
Congestion of the optic disc.
Cystic degeneration of the retina.
Detachment of the retina.
Dropsy of the optic nerve sheath.
Epilepsy of the retina.
Embolism of the central artery of the retina.
Embolism of a branch of the central artery of the retina.
Effusion under the retina.
Excavation of the optic disc.
Foreign body in the retina.
Hyperæmia of the retina.
Hyperesthesia of the retina.
Ischæmia of the retina.
Neuro-retinitis.
Neuro-retinitis, ascending.

Neuro-retinitis, descending.
Neuritis, syphilitic.
Œdema of the retina.
Œdema of the optic disc.
Opaque optic nerve fibers.
Papillitis (choked disk.)
Peripapillary degeneration of the retina.
Perineuritis, optic.
Perivasculitis, retinal.
Retinitis, albuminuric.
Retinitis, central.
Retinitis, central recurring.
Retinitis, chronic.
Retinitis, circumpapillary.
Retinitis, circumscribed.
Retinitis, diabetic.
Retinitis, diffuse.
Retinitis, hemorrhagic.
Retinitis, leucæmic.
Retinitis, oxaluric.
Retinitis, pigmentary.
Retinitis, proliferating.
Retinitis, pernicious anemic.
Retinitis, sympathetic.
Retinitis, syphilitic.
Retrobulbar optic neuritis.
Thrombosis of the retinal vessels.
Tumors of the retina.

AFFECTIONS OF THE SCLEROTIC.

Anterior scleral staphyloma.
Episcleritis.
Equatorial scleral staphyloma.
Foreign body in the sclera.
Posterior scleral staphyloma.
Scleritis.
Wounds of the sclera.

OPERATIONS ON THE EYE.[1]

On the conjunctiva.

For pterygium.

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1 There are about fifty titles in this list that are not to be found in that reported by the committee to the Royal College of Physicians.

Removal of tumors.
Removal of foreign bodies.
Syndectomy (peritomy).

On the cornea and anterior chamber.

Ablation of staphyloma.
For cystoid scar.
For serpent ulcer of the cornea (*Saemisch*).
Paracentesis of the cornea.
Removal of foreign bodies from the cornea.
Removal of tumors from the cornea.
Removal of foreign bodies from the anterior chamber.
Tattooing of the cornea.

On the globe and orbit.

Enucleation of the globe.
Exenteratio orbitæ.
Extraction of foreign bodies from the interior of the eye.
Neurectomy.
Optico-ciliary neurotomy.
Paracentesis of the walls of the globe.
Puncture of the optic-nerve sheath.
Removal of tumors from the orbit.
Removal of tumors from the optic nerve.
Sclerotomy.

On the lids.

For ankyloblepharon.
Blepharoplasty.
For destruction of the hair follicles.
For ectropion.
For entropion.
For enlargement of the palpebral opening (canthotomy).
For evacuation of cysts.
For excision of piece of tarsal cartilage.
For ptosis.
For removal of tumors.
For removal of hair bulbs.
For removal of the tarsal cartilage.
For the restoration of lid.
For symblepharon.
For tarsorrhaphy (diminishing of the palpebral opening).

For trichiasis.
Transplantation of the cilia.

On the muscles.

Tenotomy of the muscles (strabotomy).
Advancement of a muscle.
Excision of a piece of muscle.

On the iris.

Corelysis (*Streatfield*).
Detachment of posterior synechia (*Passavant*).
Iridectomy.
Iritomy.
Irito-ectomy.
Iridodesis.
Removal of foreign body from the iris.

On the lachrymal apparatus.

Destruction of the lachrymal sac.
Division of stricture of the nasal duct.
Enlargement of the punctum.
Extirpation of the lachrymal sac.
For atresia of the punctum.
Opening of the lachrymal sac.
Probing the nasal duct.
Removal of the lachrymal gland.
Removal of tumors of the lachrymal gland.
Slitting up the canaliculus.

On the lens.

For depression of cataract (couching).
For extraction of cataract by the flap method.
For extraction of cataract by the Graefe method.
For extraction of cataract in the capsule.
For extraction of cataract by the linear method.
For extraction of cataract by the Weber method.
For extraction of cataract by the sclero-corneal flap method.
For scoop extraction.
For secondary cataract.
For solution of cataract.
For removal of cataract by suction.

THE THERAPEUTIC VALUE OF JEQUIRITY.

BY S. POLLAK, M. D., ST. LOUIS, MO.

In compliance with your request, I send you a brief statement of my experience of the therapeutic value of jequirity. I have used it quite extensively, both in hospital and private practice, since the latter part of 1882. I have reported the history of my first three cases in a paper read before the Missouri State Medical Society May 16, 1883, and the St. Louis Medical Society May 26, 1883, (see St. Louis *Medical and Surgical Journal*, July 1883). They were aggravated cases of chronic trachoma with dense pannus. DeWecker's original cold fresh infusion of jequirity was brushed over the everted lids, and absorbent cotton saturated with it, was applied over them. In five days a sero-purulent discharge was established, a croupous membrane had formed over the palpebral conjunctiva, which subsided on the discontinuance of the jequirity; and with it, disappeared the granulations of the lids, and the vascularity of the cornea; leaving cornea and conjunctiva in an absolutely healthy condition in two of these three cases.

The third case did not fare quite as well, owing probably to a naso-pharyngeal complication of syphilitic origin.

A series of thirty-three cases of trachoma with pannus followed, of more or less gravity, which were treated almost in a stereotype manner, like the three just mentioned, with uniform good results. But the 34th case was a painful surprise to me; it was a severe and rude check to the triumphant career of jequirity. The case was fully reported in a paper read before the St. Louis Medical Society, and published in the *Weekly Medical Review* in March 1884.

It was that of a woman aged 28, married, but childless, who was suffering for many months from granulations of the palpebral conjunctiva, with large pannus, and on whom standard remedies had been tried by able oculists before I saw her at the clinic. An infusion of jequirity was applied in the usual manner. A sero-purulent secretion was established on the 2d

day, and a firm membrane on the palpebral conjunctiva on the 3d day, with hard painfully swollen lids; which, however, subsided on the discontinuance of the jequirity on the 5th day. There was every reason to look for a rapid and radical cure. But three days later, purulent infiltration of the entire cornea of the right eye ensued, resulting in a partial sloughing of it, on its lower aspect. Vision was irretrievably lost. The cornea even now looks opaque, flat, with a thin cicatrix where the slough came off, through which a few rays of light are admitted, and fingers in close proximity can be counted. The cornea of the left eye is clear, vision good, but follicular granulations on the palpebral conjunctiva of both eyes have recurred.

I am not satisfied that jequirity was the main factor in this unfortunate result. There is reason to ascribe a large part, and perhaps the whole of it, to a traumatism (the patient thought she scratched her eye).

I became henceforth more cautious in the use of jequirity. Seventeen more cases (fifty-one in all) have since been treated successfully with it, but my procedure is greatly modified in diverse ways:

1. I saw to it that only sound beans were used. These must be decorticated before they are bruised, and macerated only 1 to 2 hours in cold water and filtered; the infusion not to exceed 3 per cent.

2. 3 to 4 applications to the everted lids, by means of a camels-hair pencil suffice to induce a sero-purulent discharge, with membranous formation on the palpebral conjunctiva, large oedema of lids and excessive lachrymation, but which soon disappear, without the aid of any other remedy, and leave a notable improvement of the vascularity of the cornea and of the granular lids.

Among the fifty-one cases, there were patients of both sexes, of all ages and of three races.

The cardinal symptoms of panniform trachoma were more or less pronounced in all; there were none, who had not been under professional care before, so that I could commence with the jequirity at once. Indeed, a goodly number came for that sole purpose from a great distance.

It would exceed the scope of your enquiry, and the limit of your journal, were I to tabulate my cases in such a beautiful and practical manner, as our friend, Dr. Gruening did. A brief history of a few typical cases will probably suffice you.

1. A farmer of Missouri, æt. 54, was brought to the clinic by his physician. Fifteen years ago, he had had an attack of "sore eyes," which had left him sightless and helpless to this day, resisting the best treatment "to be had."

I found large, hard granulations of the palpebral conjunctiva, several anterior symblephara. Cornea covered with a dense network of bloodvessels, the pupils scarcely discernible. I dissected the symblephara off the eye-ball and attached them to the palpebral conjunctiva in places, denuded for the purpose. DeWecker's 4 per cent infusion, was *instilled* under the upper lids every 6 hours, and compresses, saturated with it were placed over the eyes. Not until the third day did an abundant serous secretion follow, which became purulent on the fourth. The lids were œdematous, painfully hard, evertible with difficulty, but sufficiently so, to exhibit membranes in the substance of the palpebral and ocular conjunctiva. The use of jequirity was stopped, and only bathing with hot water enjoined. The improvement was magical. One by one, the annoying symptoms gave way. When on the eighth day the lids were raised with elevators, he exclaimed, "he could see." He returned home on the thirteenth day, with corneæ perfectly clear, the conjunctiva of lids smooth. He read the large print in a daily paper. He has been heard from nearly every month since; he has not lost a days' work on the farm, and "reads the Bible every Sunday."

2. I performed Hotz's operation for trichiasis and distichiasis, with abrasions of the cornea, on a negro male, aged 33, successfully, but though the palpebral margin and lashes became everted, the trachoma and pannus which accompanied it, and had so long existed, were not much benefitted. Reluctantly, and only as a dernier resort, I applied by instillation a three per cent infusion of jequirity, three or four times, with surprising effect. On the fourth day, jequiritic ophthalmia was established in all its severity, but subsided as rapidly, with the granulations smothered, pannus lessened, the corneal abrasions healing, haziness disap-

pearing. In ten days, he left the hospital, cured. No recurrence reported six month later.

3. A Mongolian of 30, with trachomatous pannus and concomitant blepharophimosis, which made it difficult and painful to evert the lids, canthoplasty was performed on, but without influencing the trachoma sufficiently. Jequirity was resorted to, as in the preceding case, with equally prompt and beneficial result. He returned to his laundry on the tenth day, happy and contented, with the prodigal promise he would, on his return to China, send all ophthalmic Confucians to this clinic.

I had more trouble with juveniles than with adults; with subacute, than with chronic cases, so that I was led to reach the following conclusions:

1. Jequirity is one of the most interesting, and surprising therapeutic agents; very potent, yet limited in its effect.

2. It is the most reliable and prompt remedy in the treatment of trachoma and pannus.

3. The more inveterate the granulations, the more efficient and striking the result.

4. Adults are more amenable to treatment than young individuals.

5. Abrasions, or even ulcerations of the cornea are no bar to its cautious use.

6. Pyorrhœa is no essential factor in the treatment, but a sero-purulent discharge is, as well as the formation of a membrane on the palpebral conjunctiva.

7. Atrophy of the conjunctiva and formation of cicatricial tissue may be exceptional occurrences; they have never been met with by me.

8. A sound bean, and a fresh infusion—not more than 48 hours old, is a *conditio sine qua non*; the deterioration of the infusion is so rapid, that in three days it swarms with bacteria, becomes putrid, fetid and irritating, and unfit for use.

9. The maximum strength of the infusion need not exceed 3 per cent, and a maceration of a few hours suffices to abstract

all its medicinal properties. A stronger infusion, and a too frequent application, may induce destructive purulency.

10. Opiates can be dispensed with, for, all painful symptoms subside on the discontinuance of the jequirity.

[The editor of this Journal thought it of importance that the bad and good results from the use of jequirity should be equally well known to the profession. He has to add to the unfortunate case of Dr. Pollak's, one from his own practice, in which, during the croupous inflammation caused by a 3 per cent. infusion, prepared according to von Wecker's prescription, a dense pannus developed in a clear cornea, which did not yield to the repeated use of jequirity. He further desires to state, that during a discussion on the subject at a meeting of the St. Louis Medical Society, several gentlemen reported cases in which large ulcers were produced in the cornea by the use of jequirity.]

NOTICE.

The continuation of Dr. Alt's paper on sympathetic ophthalmia will appear in the July Number.

The better and promptly to answer numerous inquiries of advertisers and their requests for such favors, the publishers wish to state, that it is *not*, in accordance with the policy of the American Journal of Ophthalmology, that any editorial mention of advertisements appear therein.

CORRIGENDA.—NO. 3.

Page 65, Sixth line from above for *granulation* read *enucleation.*

Thirteenth line from above for *amount* read *remnant.*

Page 68, seventh line from above for *come into* read *cover in.*